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# INSTALLATION OF TURBINE GENERATOR (UNIT 2) AT KAJAKI DAM HYDROPOWER PLANT

DECEMBER 2013 – DECEMBER 2016

\$63 MILLION

## OVERVIEW

The installation of a third turbine generator (Unit 2) at Kajaki Dam Hydropower Plant in Helmand Province was a major accomplishment in U.S. and Afghan government efforts to expand access to electricity in Afghanistan. The turbine was commissioned in October 2016, adding 18.5 megawatts (MW) of power to the country's southern electrical grid. The successful project reduced reliance on more expensive and dirtier diesel generation and nearly doubled the amount of renewable energy distributed to Kandahar, Afghanistan's second-largest city and a hub of commerce in the south. The Afghan national electric utility, Da

## Afghanistan Breshna Sherkat (DABS), assumed full responsibility for operations and maintenance of the facility in March 2017.

In 2005, USAID awarded a contract for the design, manufacturing, and installation of the third turbine (Unit 2) at Kajaki Dam. The turbine and generator components arrived in Afghanistan in 2008 and were transported to the site in collaboration with the British Military, via Operation Eagle Summit, one of the largest logistical operations since World War II. Due to security challenges, the equipment remained on site in secure storage. In 2014, with USAID on-budget assistance, DABS signed a contract for the installation and commissioning of the turbine, plus completion of additional power plant upgrades. The installation and upgrades were completed in 2016. USAID provided operational training through March 2017, at which point DABS assumed full responsibility for all facilities and operations. This marks the completion of USAID's first on-budget project with DABS and demonstrates DABS' own growing internal capacity to manage and implement large projects.

### ACTIVITIES

- Installed the third turbine (Unit 2) generator.
- Installed a modern digital control system for the power plant.
- Upgraded the two existing turbines.
- Provided operations and maintenance training to DABS engineers and technicians.

### ACCOMPLISHMENTS

- Completed third turbine (Unit 2) installation and commissioning which added 18.5 MW to the previous plant generation capacity of 32 MW.
- Upgraded digital control system for more efficient management of power plant operations and electrical demand.
- DABS assumed full responsibility for all power plant operations and maintenance and is delivering nearly double the amount of power to southern Afghanistan.
- Mitigated power shortages and reduced reliance on costly and dirtier diesel fuel for the nearly 1 million people served by the Southern Electrical Power System in Kandahar and Helmand Provinces.

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